

2012 Water Quality Report

Lancaster Water Works – PWS ID #KY0400233

Is my water safe?

We are proud of the record that Lancaster Water Works (LWW) achieved in meeting the U.S. Environmental Protection Agency (EPA) and State Drinking Water Health Standards during 2012. During 2012, we conducted more than 196 tests for over 100 contaminants; we detected very few of those contaminants and found none at a level higher than the EPA allows. Following are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Our water comes from the Kentucky River—a surface water source. Our pumps are located at the mouth of Davis Creek in the pool formed by Lock and Dam No. 8. The water is delivered to the head of Lancaster's East Reservoir, about one mile south of Lancaster off Highway 27. Gravity supplies the treatment plant through an intake structure located at the lower end of the lake. A little less than 10% of the water treated comes from precipitation within the reservoir watershed.

Source water assessment and its availability:

The Kentucky River has proven to be a reliable supplier of high quality raw water over the thirty years that it has been used by the City of Lancaster. This watershed in Eastern Kentucky is heavily wooded and there is little industrialization along its upper reaches. Some quality concerns have existed over oil wells, strip mines and the "straight pipes" of some residences in the watershed. Some concerns have also arisen about the ability of the river to supply rapidly growing Central Kentucky with an ample supply of water. This is really a management issue since far more water comes down the Kentucky River each year than could ever be used. A revitalized Kentucky River Authority seems positioned at this time to begin active management of the watershed. The 1996 Safe Drinking Water Act amendments created a new program of source water assessment. Following is a summary of the system's susceptibility to contamination, which is part of the completed Source Water Plan (SWAP). The completed plan is available for inspection at the Judge-Executive's office. An analysis of the susceptibility of the Lancaster water supply to contamination indicates that this susceptibility is generally moderate. There are, however, a few areas of high concern. Several bridges, agricultural areas, a hazardous materials handler and impaired water body occur in the immediate vicinity of the intake. An accidental release of toxic substances at some sites or mismanagement of activities at other sites could potentially lead to the contamination of Lancaster's intake. The presence of an impaired water body may indicate that environmental conditions potentially detrimental to source waters already exist within the watershed. Finally, there are numerous permitted operations and activities and other potential contaminant sources within the watershed that cumulatively increase the potential for the release of contaminants. These potential contaminant sources include everything from underground storage tanks and major roadways to forested areas with the potential for logging.

How is the source water treated to make it drinkable?

Water entering our plant is first disinfected with chlorine and then treated to remove impurities as it passes through the plant. The pH of the water is adjusted to prevent corrosion and it is filtered before being collected in an underground cistern or "clearwell" behind the plant. It is again disinfected before being pumped to the elevated storage tanks in Lancaster. The elevation supplies the pressure or "head" needed to push the water throughout the county and to Crab Orchard.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. LWW is responsible for providing high quality water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using the water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline 800-426-4791) or at <http://www.epa.gov/safewater/lead>.

How can I get involved?

For further information please contact Troy Deshon at 792-3188 during normal business hours. He works under the oversight of the Mayor and City Council. Council meetings are held at 7:00 P.M. on the first Monday of each month.

Water Quality Data Table

The table below lists all of the drinking water contaminants that LWW detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Important Drinking Water Terms:

MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MRDLG: Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Units Description:

NA: Not applicable

ND: Not detected

ppm: parts per million, or milligrams per liter (mg/l); a level that corresponds to one minute in two years or a single penny in \$10,000

ppb: parts per billion, or micrograms per liter (µg/l); a level so small that it approaches being equal to two seconds out of the typical lifetime

pCi/L: picocuries per liter (a measure of radioactivity)

NTU: Nephelometric Turbidity Units

of monthly positive samples: Number of samples taken monthly that were found to be positive

< Less than

Contaminants (units)	Maximum		Range	Violation	Typical Source
	MCLG	MCL	Level Detected	Low	High
Total Organic Carbon Measured as ppm; reported as a ratio (TT is based on a ratio of the actual TOC removed to the required TOC removal; a ratio of 1 or greater is considered to meet the TT; LWW had 100% compliance with this TT)	NA	TT	1.86	NA	1.10 2.67
					No
					Naturally present in the environment
Turbidity (NTU)	NA	TT	0.29	NA	0.05 0.29
					No
					Soil runoff

(TT is based on 95% or greater of samples/month reading at or below 0.3 NTU and never more than 1 NTU; LWW had 100 % compliance with this TT)

Contaminants (units)	Maximum		Level Detected	Average	Range		Violation	Typical Source
	MCLG	MCL			Low	High		
Barium (ppm)	2	2	0.016	NA	0.016	0.016	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	4	4	1.20	NA	0.82	1.20	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	10	10	0.59	NA	0.59	0.59	No	Runoff from fertilizer use; leaching from septic Tank sewage; erosion of natural deposits
Total Trihalomethanes (ppb)	NA	80	NA	38	9	88	No	By-product of drinking water chlorination
Halooacetic Acids (ppb)	NA	60	NA	41	14	68	No	By-product of drinking water chlorination
Gross Alpha (pCi/L)	0	15	0.69	NA	0.69	0.69	No	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation
Radium-226 (pCi/L)	0	5	0.16	NA	0.16	0.16	No	Erosion of natural deposits
Radium-228 (pCi/L)	0	5	0.96	NA	0.96	0.96	No	Erosion of natural deposits
Uranium (µg/L)	0	30	0.33	NA	0.33	0.33	No	Erosion of natural deposits

Gross Alpha, Radium 226/228, and Uranium data reflects 2009 monitoring results; these parameters were not required for compliance monitoring in 2012.

Contaminants (units)	MCLG	AL	90 th Percentile	# of Samples > AL	Violation	Typical Source
Copper (ppm)	1.3	1.3	0.064	0	No	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems

Copper data reflects 2010 monitoring results; this parameter was not required for compliance monitoring in 2012.

Contaminants (units)	Maximum		Level Detected	Average	Range		Violation	Typical Source
	MRDLG	MRDL			Low	High		
Residual Chlorine (ppm)	4	4	1.63	NA	0.66	2.02	No	Water additive used to control microbes

Other useful information:

Your water contains the following minerals related to the aesthetic quality of your water:

Calcium (ppm)	33	Chloride (ppm)	11
Sodium* (ppm)	8	Ca Hardness (ppm)	81
Total Dissolved Solids (ppm)	222	pH ranges	6.8 -- 7.5

*Sodium is naturally present in our source water. There is no standard limit on sodium in drinking water; however it is recommended to be below 20 ppm.

Contaminants that may be present in source water:

The source of drinking water (both tap and bottled water) includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agricultural, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The US Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Information provided by:

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LWW will not be mailing this report directly to its consumers; however, a copy of this report may be obtained at Lancaster's City Hall or at the County Health Department.